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MINISTRY OF PUBLIC BUILDING AND WORKS

Organisation and Practices for Building and Civil Engineering

REPORT OF THE WORKING PARTY ON
BUILDING AND CIVIL ENGINEERING PROCEDURE
IN SCOTLAND

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WORKING PARTY ON BUILDING AND CIVIL ENGINEERING PROCEDURE IN SCOTLAND APPOINTED BY THE MINISTER OF PUBLIC BUILDING AND WORKS

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To: THE RT. HON. GEOFFREY RIPPON, M.P.,
Minister of Public Building and Works,
Lambeth Bridge House,
London, S.E.1.

SIR,

We were appointed by you in October, 1962, with the following terms of reference:

> "To examine the significant differences between the organisation and practices for building and civil engineering in Scotland and those in England and Wales, and to make recommendations with a view to promoting greater efficiency."

In all, there have been 20 meetings of the Working Party. By means of public advertisement and, where appropriate, by direct approach, we invited the submission to us of evidence on any matters bearing on our terms of reference.

As a result of this, and of the general publicity given to, and the interest in, our enquiry, we have had written evidence and/or oral evidence from organisations within the building and civil engineering industries. A list of those who gave written evidence appears in Appendix 1 and of those who gave oral evidence in Appendix 2 of our Report.

Apart from this evidence received, we have obtained much information of use to us in our enquiry from a number of other sources, notably from Government departments, local authorities and other public bodies.

We wish to record our gratitude to all who have helped us in these ways.

We have gained benefit from the fact that Mr. Stuart Clink, a member of the Working Party, is also a member of the Committee on the Placing and Management of Contracts for Building and Civil Engineering Work, which Committee was appointed by you at the same time as the Working Party.

We have also benefited greatly from the presence at our meetings of the Assessors, Mr. Jamieson and Mr. Tait, whose counsel and experience have been invaluable.

Lastly, we must express our thanks to the Secretaries. This is customary in similar circumstances, and, for that reason, thanks so expressed may appear something of a formality. We would like to state quite categorically that our thanks to Mr. Kerr and Mr. Macdonald are no formality, and that our gratitude for their assistance and advice is only equalled by our regard for their skill and knowledge.

We now present our Report.

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

I. General

(*a*) There is, today, a great opportunity for the construction industry in Scotland. The volume of work is substantial. Indeed, at the present time the industry in all its branches is heavily loaded. Providing that there is no reversal of declared governmental policy, the volume of work will continue at a high and even an increasing level. Long-term programming of demand on the industry is, however, essential to achievement of maximum efficiency.

(*b*) Speaking generally, the building industry in Scotland is in a state of transition and is not yet geared to cope with this situation. The industry's difficulties have also been aggravated by the substantial increase in the demands on it, without adequate pre-arrangement. Though important changes are taking place, these are not yet on a scale sufficient to enable the industry to attain rapidly the high level of efficiency and productivity required by the present and future demands on its capacity.

(*c*) We make recommendations which, if implemented, would, we believe, lead to improvement in the efficiency and productivity of the construction industry—in particular, that organisation and practices should, so far as possible, be unified throughout Great Britain. Such unification, on the lines we recommend, will also remove obstacles to efficiency which are peculiar to Scotland.

(*d*) We must, however, clearly state our opinion that such steps will not, in themselves, do more than facilitate the process of evolving in Scotland an industry adequate in every way to present day requirements. Success in that task can be achieved only by a sustained and concerted effort. Improvement requires all sections of the industry, including the associated professions, to settle the differences which may lie between them and to agree on co-ordination and simplification of organisation and practices. We stress that the part to be played by the clients in achieving this improvement is of the utmost importance.

(*e*) Accordingly, in our Report we draw attention to certain weaknesses within the industry. The consequences of the rapidly increasing demands on the resources of the industry to which we refer are that it has been unable to evolve and develop quickly enough to compete with these circumstances. Many of these weaknesses are, of course, by no means unknown in other industries similarly placed, and many are doubtless not peculiar to the industry in Scotland.

(*f*) Nevertheless, it is essential that these weaknesses should be eliminated if the industry in Scotland is to meet the opportunity and challenge which confronts it. It may well be, in order effectively to meet this opportunity, that the industry in Scotland, in all its professional and contracting branches, will require to evolve more firms sufficiently and efficiently staffed and adequately capitalised.

II. Training and Recruitment

The industry must make better use of modern training and educational facilities, at all levels. In particular, the force of site agents, general foremen, building managers and building technologists must be built up. Recruitment to the industry must be improved and better career prospects provided at and through all levels. (Paragraphs 19, 20 and 65.)

III. Finance

(*a*) The flow of money in payment for work done or materials supplied is, particularly in Scotland, too slow and must be speeded up. This can be achieved partly by changes in procedure, but such would be of little effect if recommended procedures are not more faithfully followed in the future than in the past. (Paragraphs 26, and 28–30.)

(*b*) Probably more important, the industry is under-capitalised. No contractor should be encouraged to undertake more work than his financial resources reasonably allow. (Paragraphs 26–27.)

IV. Organisation

(*a*) Considerable simplification of the highly complex organisation of the building side of the industry is possible and should be undertaken by the industry itself. (Paragraphs 42–43, and 15.)

(*b*) In particular, organisations of operatives and contractors should become fully representative of the whole building industry, and, if not wholly national* in character, they should maintain the closest co-ordination as between one part of the country and another. (Paragraphs 43–44.)

(*c*) Negotiation of wages and major conditions of employment in building should be nationally unified and representative of all trades clearly identifiable with building. If this recommendation is not implemented, or if its implementation is long delayed, the negotiation arrangements in Scotland and in England and Wales should become fully representative of all building trades. (Paragraphs 46–48.)

(*d*) In the longer term, there should be unification of negotiation—and of organisation—in building and in civil engineering. (Paragraph 49.)

V. Contractual Practices

(*a*) The trend towards greater use in Scotland of the all trades* system of contracting for building work should be accelerated. The Scottish building industry is not yet making the best use of this system of contracting, and it must become organised and equipped to do so. (Paragraphs 64–65.)

(*b*) Greater use of educational facilities is of particular importance in this context, to build up the force of site agents and general foremen. (Paragraphs 65, and 19–20.)

(*c*) Smaller firms engaged in main contracting might with advantage form consortia. (Paragraph 66.)

(*d*) The practice of inviting tenders by all trades and separate trades, simultaneously, for the same work should be discontinued. (Paragraph 63.)

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* The meanings attached in this Report to the terms "national", "all trades contracting", and "separate trades contracting" are given in paragraph 8.

(*e*) Selective tendering should be adopted in preference to open tendering and selection should take account of the financial resources of the contractor as well as his competence. (Paragraph 73.)

(*f*) The principles set out in accepted codes of procedure should be adopted in practice, particularly with regard to pre-planning of work. (Paragraphs 78–80, also 67–68.)

VI. Conditions of Contract for Building Work

(*a*) There should be a standard form of conditions of contract for building work, applicable throughout Great Britain, with such minimal agreed variations as may be necessary to take account of differences between the law of Scotland and that of England. (Paragraphs 94 and 104.)

(*b*) The standard form of conditions of contract should be applicable to and used consistently for private, public authority and Government department work—if necessary with a minimal agreed list of standard variations to meet essential requirements of the public services. (Paragraph 105, also 102.)

(*c*) In drafting a national standard form of conditions of contract the current version of the R.I.B.A. Form of Contract should be used as the basis from which drafting should proceed. There may, however, be features of the Scottish General Conditions of Contract and of other forms which should be incorporated. (Paragraph 96.)

(*d*) In a national standard form of contract those provisions which relate to payment for work should markedly improve on those of the Scottish General Conditions of Contract. (Paragraphs 97–99.)

(*e*) The national standard form of conditions of contract should designate the specification as a contract document. (Paragraph 100.)

(*f*) The preparation of a national standard form of contract for building work should be undertaken by a body representative of architects, surveyors, contractors, local authorities and Government departments. (Paragraphs 101–102.)

(*g*) Pending preparation and introduction of a national standard form of conditions of contract, the Scottish General Conditions of Contract should be revised immediately, as far as is practicable on the basis of the R.I.B.A. Form of Contract. The drafting of this interim Scottish form should be undertaken by representatives of architects, surveyors and building contractors in Scotland, the Scottish local authority Associations and the Scottish Government departments. (Paragraph 103.)

(*h*) There should be a standard form of sub-contract, linked to and reconciled with the standard conditions of contract applicable to main contracts for building work. (Paragraph 106.)

VII. Conditions of Contract for Building and Engineering Work

(*a*) Eventually, a national standard form of conditions of contract should be framed, applicable to building and to mechanical, electrical and civil engineering. This should not, however, take priority over the preparation and introduction of a national standard form of conditions of contract for building work. (Paragraphs 107–111.)

(*b*) For the purpose of framing this national standard form, the drafting body referred to in paragraph VI(*f*) should be expanded to include representatives of the other appropriate sections of the industry and professions. (Paragraph 110.)

VIII. Measurement of Building Work

(*a*) There should be a unified system of measuring building work, applicable throughout Great Britain. (Paragraph 121.)

(*b*) As an interim measure, the Standard Method of Measurement, in use in England and Wales and recently revised, should be adopted in Scotland. Thereafter, when the Standard Method of Measurement is revised for national use full consideration must be given to representations put forward by the building industry in Scotland and there must be adequate Scottish representation on the drafting and revising body. (Paragraph 121.)

(*c*) At the time of revision of the system of measurement for national use an effective effort should be made to simplify it by reducing the number of items to be measured. (Paragraph 122.)

(*d*) Encouragement should be given, in the longer term, to unification of measuring practices in building and civil engineering. (Paragraph 125.)

IX. Building Materials

The supply of building materials and components must depend to a large extent on availability of raw materials and economic organisation of the supply industry. Nevertheless, there is scope for increased production in Scotland of materials and components, both traditional and new, and every effort should be made to achieve this. Long-term programming of demand on the industry is a vital factor in stimulating increased Scottish production of materials and components. (Paragraphs 132, 134, 135.)

X. Building Techniques

With the introduction of new materials and techniques, traditional differences between building techniques in Scotland and those in England and Wales are lessening. Climatic conditions in Scotland are, however, such that some of the traditional differences are justified, but there are differences, particularly in building drainage, for which no justification is evident. (Paragraphs 138–140.)

XI. Building Standards

(*a*) The introduction of the Building Standards Regulations for Scotland, to replace local building byelaws, is warmly welcomed, as is the preparation of Regulations for England and Wales. (Paragraph 142.)

(*b*) The two Codes should be as uniform as is possible, having regard to differences of law. (Paragraphs 142 and 146.)

(*c*) Local water byelaws in Scotland and in England and Wales should, as a matter of urgency, be replaced by Regulations, or, preferably, the Building Regulations expanded to cover water supply. (Paragraph 145.)

(*d*) In the longer term, the aim should be to evolve a national Code, which would cover all building work and services, and which would be applicable throughout Great Britain, with whatever stated variations might be essential to meet local conditions. Any statutory provisions which might prevent the making or restrict the scope of a national Code of this kind should be adjusted. (Paragraph 146.)

XII. Implementation of Recommendations

(*a*) Recommendations made in the past would, if implemented, have considerably improved the efficiency of the industry. They have, however, been largely ignored. Perhaps the main reason for this was that the industry as a whole was not sufficiently alive to the need for changes. We are confident that the industry in general is now very ready to accept changes which would lead to greater efficiency. We firmly believe that advantage must be taken of this, and a centrally directed effort made to stimulate this process of change.

(*b*) In particular, we regard it as of first importance that Government departments, local authorities, and other public bodies should give a lead in the adoption of recommended procedures, in the operation of their contracting arrangements.

CHAPTER 1

Introduction and General Observations

BACKGROUND TO THE ENQUIRY

The Emmerson Report

1. The Working Party was set up by the Minister of Public Building and Works, in consequence of the Government's acceptance of the recommendations contained in the Report by Sir Harold Emmerson, "Survey of Problems Before the Construction Industries", published in April 1962. In that Report Sir Harold mentioned differences between conditions, organisation and practices in Scotland and those in England and Wales and recommended the appointment of a Working Party to examine and report on those differences.

2. While we have had particular regard to the points made by Sir Harold (paragraphs 42 to 50 of his Report), we have not restricted our enquiry to matters mentioned by him.

Committee on the Placing and Management of Contracts for Building and Civil Engineering Work

3. In his Report, Sir Harold Emmerson also recommended that the system of the placing and management of contracts should be reviewed comprehensively. The Minister of Public Building and Works therefore set up, at the same time as the Working Party, the Committee on the Placing and Management of Contracts for Building and Civil Engineering Work. The terms of reference of that Committee, which is under the chairmanship of Sir Harold Banwell, are:—

> "To consider the practices adopted for the placing and management of contracts for building and civil engineering work, and to make recommendations with a view to promoting efficiency and economy."

4. Since the Committee's enquiry is related to practices throughout Great Britain, and will cover the placing and management of contracts in Scotland as well as in England and Wales, we have thought it advisable to confine ourselves in the main to matters in which there is a clearly discernible and significant difference between practices and organisation in Scotland and those in England and Wales. This has to some extent limited the scope of the conclusions and recommendations in our Report.

5. We nevertheless express opinions and make recommendations on matters which do not come within a narrow interpretation of our terms of reference. Some of these matters may be dealt with more fully in the Report of the Committee on the Placing and Management of Contracts for Building and Civil Engineering Work, and our Report should be read along with that of the Committee.

6. Throughout our enquiry we have kept in close touch with the Committee, particularly through Mr. Stuart Clink, a member of both bodies.

Civil Engineering

7. Under our terms of reference we have been concerned with both building and civil engineering. We have found, however, that differences between organisation and practices in Scotland and those in England and Wales are almost wholly in building, and our Report consequently deals mainly with the building side of the industry. We have, however, referred to civil engineering where appropriate.

INTERPRETATION

8. For clarification, we wish to give the meaning we attach to certain words and phrases we have used in this Report:

"*All trades contracting*"	The system of placing contracts whereby one main contractor contracts with the employer to undertake all the work, whether or not the main contractor in turn sub-contracts some of the trades.
"*Separate trades contracting*"	The system of placing contracts whereby several contractors contract direct with the employer for work in single trades.
"*National*"	Save in the titles of organisations, which are explained in the text, "national" has been used to apply to the whole of Great Britain.

GENERAL OBSERVATIONS

9. In later Chapters we deal more fully with the various aspects of organisation and practices for building and civil engineering work. It may, however, be helpful if we set out now our general observations on the matters falling within our terms of reference.

Implementation of Previous Recommendations

10. Since the beginning of the last war the building industry has been the subject of several enquiries—notably those by the Central Council for Works and Buildings (the Simon Committee), by the Joint Committee on Tendering Procedure (the Howard Robertson Committee), and by the Working Party on Building Operations. It is clear to us that many of the problems affecting the industry today would not have arisen if the recommendations of those various bodies had been more widely accepted and put into practice.

Compliance with Standard Procedures

11. Failure to adopt standard conditions of contract, and to adhere strictly to their requirements and to those of Codes of Procedure has also created many of the difficulties brought to our notice.

Evolution of the Scottish Industry

12. In the main, Scottish organisation and practices are not greatly different from those in England and Wales. We feel that such differences as do exist are

largely due to the fact that the building industry in Scotland has been slower than that in England and Wales to adapt itself to new forms of organisation and procedure to suit present-day requirements.

13. In particular, much of the Scottish procedure is primarily designed for separate trades contracting. Although there is now a considerable move towards all trades contracting, the procedures and indeed the general approach to building work in Scotland have not developed sufficiently, at the present transitional stage, to ensure that the best use is made of that system.

Need for National Unification

14. We can see no good reason why building organisation and practices in Scotland and those in England and Wales should be different—or indeed why, save perhaps for differences of technique imposed by climatic or other physical conditions, there should be differences between one part of the country and another.

15. It is clear to us that the full deployment of the resources of the construction industry in Great Britain requires the unification—and simplification—as far as is possible of the processes by which construction work is carried out.

Load on the Industry in Scotland

16. We refer to the comment in Sir Harold Emmerson's Report (paragraph 42) that Scotland had not experienced the stimulus of a rapidly expanding building programme, with the implication that the lack of that stimulus has hindered the development of the construction industry in Scotland. We have had no access to information about future construction work other than that generally available, but we are convinced that demands on the industry in Scotland are increasing and will continue to do so at an accelerated rate. For example, implementation of the proposals in the recently issued White Paper, "Central Scotland" (Cmnd. 2188), will obviously increase greatly the demand for construction work.

17. We are, therefore, of the opinion that improvement in productivity and efficiency is no less important in Scotland than elsewhere in Great Britain. Indeed, in so far as it is true that the Scottish construction industry has not hitherto experienced to the same extent as in England and Wales the stimulus of a rapidly expanding programme—with the increase in productivity which might be expected to flow from such expansion—then it is the more urgently necessary that efficiency and productivity be increased to cope with the tasks ahead.

18. We believe also that "stop-go" national financial policies in the past have affected the industry in Scotland more quickly and more acutely than that in England and Wales. The reason for this is doubtless that public sector work, which is more directly influenced by national policies, has formed a higher proportion of the whole construction programme in Scotland than in England and Wales. In the interests of the efficiency of the industry we hope that the demands on it will in future be distributed as evenly as possible over long periods.

Education

19. We make the general comment that, to meet the challenge of the growing demand on its capacity and the increasing use of new techniques, the industry

must improve recruitment. This must be done at all levels. Maximum use must be made of existing and developing educational and training facilities. These include apprenticeship training, day release, City and Guilds and National Certificate courses, courses of degree standard and degree courses in building technology and management in the technical colleges and through the Institute of Builders.

20. Above all, the industry must become capable of attracting the best of recruits, both among boys leaving school and among those taking the various higher courses. For this, the industry must show that it can offer good career prospects, at and through all levels.

Current Developments

21. We stress that it has become clear to us that our enquiry has been conducted during a period in which many changes have been taking place within the industry. Throughout Great Britain the industry is adapting itself to meet the heavy pressures on it; mechanisation is growing; new materials are being introduced; new techniques—including in particular the rapidly developing industrialised methods of building—are coming into use. New approaches to construction work are being adopted, and one noticeable result is that the traditional differences between organisation and practices in Scotland and those in England and Wales are disappearing.

22. We have found on the part of the industry general awareness of and receptivity to the need for close examination of organisation and practices, and a willingness to accept change which would lead to greater efficiency. Some of the measures we are recommending are already being considered by the industry with a view to adoption.

CHAPTER 2

Finance

23. There are some procedures peculiar to Scotland, to which we refer later in our Report, which have a considerable bearing on the flow of money in the industry. However, the finance of construction work generally is of such basic importance to the efficiency of the industry that we wish to comment here on the whole financial background, although, perhaps, this is not strictly within our terms of reference.

24. It has been strongly represented to us that the flow of money and the financial liquidity of the industry must be improved, and that the slow flow of money is a major handicap to the efficiency of the industry in Scotland.

25. Many reasons have been suggested to us for the present unsatisfactory financial position in the industry. We have been told that clients often hold up payments to contractors, that contractors are slow to pay sub-contractors and suppliers, that retention amounts are excessive and held too long, and that the practices of total remeasurement and of the delaying of measurement of variations until after completion of the work result in undue and often excessive delay

in final settlement. Particularly strong representations were made to us that sub-contractors, specialists, and suppliers have often to wait too long for payment and so have, in effect, to act as "bankers" to the industry.

26. Undoubtedly there is substance in these representations. The flow of money is slow, and the consequences of this are serious. While, in our view, it would be wrong to conclude that the slow flow of money is the principal cause of the financial difficulties of the industry taken as a whole, it is nevertheless of very great importance. Probably of even greater importance is that, speaking generally, the building industry in Scotland is under-capitalised in the circumstances of the present day. Too often there is a lack of sufficient capital to enable contracting firms to meet their commitments between instalment payments. Too often the supplier cannot be paid until the client has paid the main contractor and the main contractor has paid the sub-contractor. Frequently the main contractor is in difficulty, and, in consequence, delays payment to the sub-contractor. Even if instalments are promptly paid, retentions reduced, and final adjustments speeded up, we do not believe the problem will be solved, though undoubtedly the financial position of the industry and its suppliers will be much improved.

27. There can be no doubt that financial difficulties, whatever the cause, have a most adverse effect on productivity, efficiency, and general morale. Most serious, perhaps, of all, the general impression of instability must affect adversely the prospects of achieving a much needed improvement in the standard of the prospective entrant into the industry. When, however, we come to consider possible remedies for the financial troubles of the industry, it is necessary to be realistic. The building industry cannot expect to be exempted from the financial liabilities which are normal to any trading enterprise, and one of those is the provision of working capital adequate to finance normal trading requirements. It is not for us to pursue this matter further, but we would make the specific comment that the main contractor system cannot operate efficiently unless the main contractor has at his disposal adequate working capital. For this reason we regard it as important that in the selection of a contractor his financial capacity to undertake the work should be taken into account (see Chapter 4).

28. We now turn to the problem of speeding up the flow of money, on which subject we have received such strong representations. Here, too, we must make a distinction between, on the one hand, impediments to a reasonably rapid flow of money which result from weaknesses and failings within the industry itself, and which, speaking generally, are basically not peculiar to the building industry, and, on the other hand, those which result from procedures, in particular procedures of the industry in Scotland, which may well be amended or abolished.

29. The flow of money will be speeded up, and the financial difficulties of the industry in some measure eased, if clients, professional consultants, and contractors observe in practice the conditions of contract in respect of payments, if work done is certified and paid for promptly, if contractors pay their sub-contractors and suppliers timeously, and if final adjustment of accounts is dealt with expeditiously and not postponed in order to undertake new work. These are mainly matters within the control of the industry itself. Problems of this kind are not unknown in other industries, though normally not in so acute a form. Accordingly, these are not matters to be remedied by Government intervention. These difficulties will remain so long as the industry, or any section of the industry, is undertaking more work than it is financially capable

of undertaking, and so long as sub-contractors and suppliers are prepared to give the long credit about the burden of which they complain. In the end, as always in such circumstances, the remedy will be that the efficient will prevail over the inefficient, using those terms in their widest sense.

30. There is, however, one further important comment which we would wish to make here. It is, in our view, essential that Government departments, local authorities, and other bodies in the public sector, should set an example of prompt payment for work contracted for and properly carried out to their satisfaction, and should not permit payment to be delayed by procedures which are unnecessarily cumbersome or slow. It has been suggested to us that there is room for improvement here, and, in particular, that payments by many local authorities, which are responsible for a very large part of the total construction programme, may often be held up because each instalment payment or payment for variations has to be approved by the appropriate committee, instead of being authorised by the appropriate official of the authority. We can see no reason why payments, within the approved contract sum plus authorised variations, should not be authorised by that official.

31. In relation to finance generally, and in particular to the question of under-capitalisation of contracting firms, we have no direct evidence that the position in Scotland is worse than in England and Wales. There are, however, as we have said, peculiarly Scottish procedures—notably the conditions of contract—which impede the flow of money to a greater extent than in England and Wales. We think that for this reason if for no other the Scottish industry suffers more from financial difficulties. We deal with conditions of contract in Chapter 5 and there is no need for a detailed examination at this stage. We must again, however, state our view that the slow flow of money is only one cause of the unsatisfactory position of the industry.

CHAPTER 3

Organisation of the Construction Industry

32. In considering how organisation and practices for building and civil engineering work in Scotland differ from those in England and Wales, we have examined the broad structure of the industry in the two countries. We find no really significant differences in this structure, save perhaps in the distribution of firms and the arrangements for negotiation.

33. We have regarded the construction industry, within the meaning implied in our terms of reference, as covering not only the building and civil engineering contractors and operatives but the whole machinery by which building and civil engineering work is planned and executed.

34. The "industry" in this sense, therefore, embraces the client or building owner, the architect, the engineer, the specialist consultant, the quantity surveyor, the contractor, and the operative.

35. The architect, engineer, and quantity surveyor are normally appointed by the client but a considerable number of local authorities and other public bodies have professional staff who carry out these duties. We did not feel that

our terms of reference called on us to examine in detail the internal organisation of the professions of architecture, engineering and surveying. In so far as there are differences which affect procedure we shall where appropriate comment on these in later Chapters.

Distribution of Firms

36. The information available to us is that at April, 1962 there were 6,899 contracting firms in Scotland, having some 111,100 operatives, and 80,720 contracting firms in England and Wales, having some 994,200 operatives. The analyses of these firms by number of operatives and by trade classification is given in Tables 1 and 2 of Appendix 3.

37. It will be seen from Table 1 of Appendix 3 that in both countries there is a high proportion of the smallest firms employing fewer than 20 men and that the bulk of the remainder are in the category employing between 20 and 100 men. Since there is no significant difference in the distribution of firms, by size, in the two countries it is not for us to say whether the forces of the construction industry in Scotland or in Great Britain as a whole are deployed to the best advantage. In the light of the trend towards domination of the construction programme by major public and private developments, it could, however, be argued that a higher proportion of the industry should be comprised in larger firms and that this might make for increased efficiency, better management, and a sounder financial position. On the other hand, the smaller firms have clearly an important part to play, not only in carrying out small capital works, but also in the substantial proportion of all construction work which is taken up in repair and maintenance. In any case, it would seem that change in the distribution of firms within the construction industry must be almost wholly a matter of evolution in relation to the trend in the level and nature of demand on the industry.

38. Table 2 of Appendix 3 shows that there is in Scotland a very much smaller proportion of firms classified as general builders, and consequently a much higher proportion of firms specialising in a particular trade—for example, carpentry and joinery, plumbing and roofing. There is no doubt a historical reason for this in that the industry in Scotland has been slower than that in England and Wales in departing from the traditional one-trade contract system. We shall comment further on this in Chapter 4.

Administrative Organisation of the Industry

39. There are many organisations, Scottish, English and national, concerned with the organisation of the separate parts of the industry, with liaison between those parts, and with liaison between the industry and its clients. The most important of these bodies and their relationship with the equivalent English or national bodies are described briefly in Appendix 4, and the negotiation arrangements for building are set out in tabular form in Appendix 6.

40. The pattern which emerges from the brief survey set out in Appendix 4 is that the organisation of the construction industry, and the arrangements for liaison among its various parts and between the industry and its major clients, are of considerable complexity, particularly on the building side. This is perhaps inevitable in an industry which embraces many crafts and techniques, but,

considered nationally, the complexity of organisation is no doubt aggravated by the fact that some of the many bodies concerned are Scottish, some English, and some national with varying degrees of control of Scottish affairs delegated to Scottish branches or committees.

41. The organisation of the industry is apparently as complex in England and Wales as in Scotland, but since the headquarters of both the English and the national bodies are in England (usually in London) any practical difficulties must clearly be less acute in England. Moreover, the arrangements for negotiation between employers and operatives appear to be more comprehensive in England and Wales than in Scotland.

42. Under our terms of reference we are concerned with differences between organisation in Scotland and that in England and Wales, and it is not therefore for us to examine in detail whether, and if so to what extent, the whole national organisation of the construction industry in all its parts should be simplified. Our view is, however, that considerable simplification is both desirable and possible, and we recommend that this be reviewed as a matter of urgency by the industry itself.

43. In the main, the administrative organisation is on a national basis with some Scottish representation on national issues and a Scottish organisation—of varying degrees of autonomy—to deal with Scottish affairs. We feel that if practices and procedures in the construction industry throughout Great Britain are to be unified, as we suggest in later Chapters, then it is essential that the representative bodies of the various sections of the industry, and the liaison machinery, should be as closely co-ordinated as possible. While we would not go so far as to suggest that all the bodies concerned should necessarily be constituted on a wholly national basis, we would recommend that the closest co-operation should be maintained between English and national bodies on the one hand and their Scottish counterparts or branches on the other.

44. Our first recommendation is that the trade organisations, both of contractors and of operatives, should become fully representative of all trades which are clearly identifiable with the construction industry.

45. Co-ordination and co-operation is of particular importance in relation to negotiation of wages and conditions of work. Anomalies and difficulties have already arisen, and may well arise in the future, through the existence not only of separate Scottish and English arrangements for negotiation of wages and working conditions in the building industry, but of the separate negotiation arrangements for individual trades within Scotland, and to a lesser extent, within England and Wales.

46. It can be argued with considerable force that the record of freedom from dispute in the building industry demonstrates the success in practice of devolution of negotiation on wages and conditions of employment, and that to remove from the Scottish organisations the duty to negotiate wages and working conditions would so weaken their authority in the eyes of operatives and contractors alike as to lessen their power to deal with other purely local questions. On the other hand, there is no doubt that mobility of both operatives and contractors to and fro across the Border is much more common than formerly, and it is likely that this trend will continue. We recommend therefore that if the industry is to operate freely on a national basis, and if difficulties are to be minimised, the balance of advantage lies in a unification of the arrangements for

negotiation of wages and major conditions of employment, such as already operates in civil engineering and in at least some building trades.

47. We also urge that national negotiation arrangements, as recommended in paragraph 46, should be fully comprehensive and should be representative of employers and operatives in all trades.

48. Whether or not the negotiation arrangements are unified nationally as we recommend, we think there is a clear case for the incorporation into the existing arrangements of all trades which have at present separate negotiation. We would recommend therefore that the aim should be the early establishment of national negotiation arrangements, incorporating all the trades identifiable with building; that failing, or if the establishment of national arrangements is long delayed, then the arrangements in Scotland and in England and Wales should be made fully comprehensive, pending national unification.

49. The civil engineering side of the industry already has a nationally unified negotiation arrangement, in that there is a Conciliation Board for Great Britain. We appreciate the difficulties, but we consider that there would be advantages in the establishment of common negotiation arrangements for both building and civil engineering work, and we recommend that consideration should be given to this being achieved. This should not, however, take priority over or delay unification of the negotiation arrangements in building.

50. Since the Working Party was set up the Scottish National Building Trades' Federation (Employers), which comprises the employers' side of the Scottish National Joint Council for the Building Industry (see Appendix 4), affiliated to the National Federation of Building Trades Employers. Moreover, the Scottish Federation have given notice of their withdrawal from the Scottish National Joint Council, effective as from January, 1964. It is not entirely clear at this stage what will be the effect of these developments on the negotiation machinery in the building industry, but we understand that efforts are being made to constitute a National Joint Council which would cover the building industry throughout Great Britain. These moves are in tune with the foregoing recommendations and we welcome them.

CHAPTER 4

Contractual Practices

51. We consider in this Chapter the procedures involved in contracting for construction work and the selection of contractors to carry out the work.

52. There are many different contracting and tendering procedures each of which is, of itself, virtually the same in principle in Scotland as in England and Wales, although there may be differences in the ways in which the principles are put into practice.

53. In general, the outstanding difference in procedure is the survival in a large measure in Scotland of the system of separate trades contracting for building work as against the almost universal use of all trades contracting for such work in England and Wales. We deal first with this important difference,

which reflects and is reflected in the organisation of the industry in the two countries. There is, for example, a greater proportion in Scotland of firms specialising in one or two trades.

Separate Trades and All Trades Contracting

54. The traditional Scottish system of letting building contracts by separate trades is still a recognised method of contracting north of the Border. Under this system the client enters into contracts direct with the contractors in each of the various trades involved, and the overall co-ordination and progressing are left largely to the architect and the clerk of works.

55. Under the all trades contracting system, for long the recognised practice in England and Wales, the whole of the work is let in a single contract to a main contractor who, while he may sub-let portions of the work, nevertheless assumes full technical and financial responsibility for the work of all trades, including that of sub-contractors nominated by the client.

56. The separate trades system worked well in the past, when building was largely the work of the traditional crafts, and contracts were commonly let to local firms accustomed to working with each other. Architects were apparently willing to act as co-ordinators and to assume responsibility for overall planning and progressing of site operations, although it was not part of their terms of engagement to do so.

57. The increasing complexity of building, and the speed of erection made possible by the use of mechanisation and new techniques, call for a high standard of site organisation and co-ordination, which is difficult to achieve in separate trades contracting. Moreover, the architect cannot be expected to devote the time required for close supervision and organisation of separate trades contracts, in addition to his proper duties. For these and other reasons to which we refer elsewhere, the separate trades system is rapidly going out of favour in Scotland, and its use is now much less widespread than Sir Harold Emmerson's Report suggests. In the cities and larger towns in particular, and for larger contracts, there has been a steady trend towards the use of all trades contracting. This trend is illustrated by the replies to a questionnaire issued by us with the co-operation of the Scottish Branch of the Royal Institution of Chartered Surveyors to all practising chartered quantity surveyors in Scotland. These suggest that in terms of numbers about twice as many building jobs are now being done in Scotland by all trades contracting as by separate trades; and that in terms of cost the value of all trades work is several times that of separate trades work.

58. While the difficulties and delays which can arise in work done by separate trades contracting are now generally recognised, the representations made to us were by no means unanimous in condemning this system. The professional associations favour the general adoption of all trades contracting wherever possible. They suggest, however, that there are not yet in Scotland enough building contractors with the resources and experience to undertake on an all trades basis all the large jobs coming into the Scottish building programme, and that, for this reason, separate trades contracting will continue to have a place for some time to come, particularly in small towns and rural areas.

59. In their representations to us the building contractors, while contending that the separate trades system has many virtues, agreed that in view of changing

techniques in building all trades contracting had to be accepted, provided that it was properly operated.

60. The organisations representing some contractors in trades which at present commonly operate under direct contracts would prefer the continuation of direct contracting between client and contractor, under the separate trades system, rather than sub-contracting under the all trades system.

61. It is, however, probably fair to say that such representations as were made to us against all trades contracting were largely against the operation of the system as practised at present in Scotland, rather than against its principles. In effect, it is complained that all trades contracting as at present carried out by many firms in Scotland is not properly operated, and that the co-operation and consultation between main contractors and sub-contractors which are essential to its success are too often lacking. Many Scottish contractors are said to act as main contractors in name only, without assuming responsibility for the proper planning, progressing and co-ordination of the work of the various trades, or for the adjustment of all variations. We feel that there is substance in this complaint, but this may well be inevitable in what is undoubtedly a transitional stage in Scottish building contracting procedure.

62. The introduction into Scotland of all trades contracting has clearly been attended with difficulties arising from the organisation of the industry and the tradition of separate trades contracting. Although the number of contractors in Scotland capable of undertaking all trades contracts is growing, many firms do not so far have the organisation and experience to operate efficiently as main contractors on work of any size or complexity. It is likely too that some firms find difficulty in obtaining the working capital necessary to undertake the larger operations. There is also in Scotland a shortage of the trained and experienced site agents and general foremen necessary for the operation of the all trades contracting system.

63. We have had evidence that there is, to some extent in Scotland, a practice of inviting tenders for building work on a dual basis—all trades and separate trades. This we regard as thoroughly undesirable. It must, if used at all extensively, tend to retard the development of the full potential of the all trades system; competent main contractors are likely to avoid competing for work on that basis; even if some of the firms submitting all trades tenders are also among those submitting separate trades tenders, there is considerable waste of the professional and administrative resources of the industry; and the increase in the number of necessarily unsuccessful tenders must reduce the economic efficiency of the industry and needlessly inflate overall costs. We recommend that this practice should be discontinued.

64. Although there will continue to be a place for separate trades contracting, particularly in the more remote areas and for smaller jobs, all trades contracting has over a large part of the whole building programme distinct advantages in the better management, organisation and progressing of work, and in the clear definition of responsibilities. It has also been represented to us, and we agree, that under the all trades system it is easier to arrange for compliance with safety, health and welfare requirements. We are convinced that the present trend in Scotland towards more widespread use of the all trades system should he encouraged, and that every effort should be made to ensure that the system is properly operated.

65. We recommend therefore that the building industry in Scotland should, as quickly as possible, become organised and equipped to take full advantage of all trades contracting. In particular, we recommend that the force of site agents and general foremen should be built up; that greater use should be made of the increasing facilities for training in building and in building management; and that all contractors, whether acting as main contractors or as sub-contractors, should realise the need for close and early consultation among all concerned, to ensure proper phasing and progressing of work.

66. We consider that it would be in the interests of the smaller firms engaged in main contracting to form consortia in order to enlarge the scope of their operations and to enable them to cope with larger contracts.

67. In urging the more general adoption of all trades contracting for building work in Scotland, and recommending action by contractors to improve the efficiency of the system in practice, we have not overlooked the contribution to efficiency which must be made by the client and the professions. It is important, particularly in the present transitional period, that the recommended procedures should be properly observed in all respects.

68. We consider for example that the client must give his architect a definite brief and time in which to prepare his design; that the architect must pre-plan the job properly and, where variations from the design or specification are made, obtain the prior approval of the client where necessary and issue variation orders, without delay, to cover them; and that the quantity surveyor should indicate whether the schedule of quantities is accurate or only approximate, and agree with the contractor's surveyor the value of each variation order as it is issued so that the final account can be settled promptly on completion of the work on site.

"Labour Only" Sub-Contracts

69. We have had some evidence about difficulties which may arise from the use of "labour only" sub-contracts. This we regarded as being a matter for the Committee on the Placing and Management of Contracts for Building and Civil Engineering Work, and we accordingly referred the matter to that Committee.

Tendering Procedure

70. There are many different ways in which contracts for building and civil engineering work are allocated and let to contractors. These various methods are of themselves basically the same in Scotland as in England and Wales. Contracts may be let after competitive tendering, or by negotiation. Negotiation of contracts, in its various forms, though not yet extensively used, has tended to become more common in recent years. This trend may perhaps be expected to develop in the interests of efficiency, and as new techniques of building, particularly the use of prefabrication and proprietary building systems, come into increasing use.

71. By far the most common method of selecting contractors, both in Scotland and in England and Wales, is still, however, by competition in one form or another. This may be, for example, by tendering on a schedule or a bill of quantities, on drawings and specification only, or on cost reimbursement plus a fee or percentage. Competitive tendering may be "open" or "selective", and on a firm price basis or subject to fluctuations in the cost of labour and/or

materials. At present, however, the majority of contracts both in Scotland and in England and Wales are let following competitive tendering based on schedules or bills of quantities.

72. We draw attention here to a difference between Scottish and English practice concerning schedules or bills of quantities. In England and Wales bills of quantities are recognised as being either "accurate bills", in which case the settlement of the contract is by adjustment of variations only, or "approximate bills" calling for re-measurement of the work. In Scotland there is frequently a lack of indication as to when a schedule of quantities is accurate or when only approximate or provisional. This is one of the reasons why work is so often re-measured.

Selective tendering

73. Most studies of the working of the building industry, and in particular the Simon and Howard Robertson Reports, have recommended the adoption of selective tendering, whereby competition is restricted in one way or another to selected contractors instead of being open to any contractor who cares to take part. The principles of and the arguments for selective tendering are the same in Scotland as in England and Wales and we shall not, therefore, deal with them in detail. The representations made to us have been numerous and unanimous in favouring selective tendering as likely to improve the efficiency of the industry. Particularly strong representations were made to us that properly operated selection of contractors would minimise the risk of contractors being entrusted with work which was beyond their financial capacity (see Chapter 2). Our information is that, although selective tendering is used to a considerable extent, many public authorities both in Scotland and in England and Wales still commonly proceed by fully open competitive tendering. We are convinced of the advantages of selective tendering, properly operated, and we fully endorse the recommendations already made on this subject by the Committee on the Placing and Management of Contracts for Building and Civil Engineering Work, in an interim Report to the Minister of Public Building and Works.

Codes of Tendering Procedure

74. In both Scotland and in England and Wales Codes of Tendering Procedure have been prepared and published by joint committees of architects, surveyors and building contractors. These are:

- (*a*) "Competitive Tendering for Building Works in Scotland", published in 1962 by the Joint Standing Committee of Architects, Surveyors and Building Contractors in Scotland.
- (*b*) "A Code of Procedure for Selective Tendering", published in 1959 by the National Joint Consultative Committee of Architects, Quantity Surveyors and Builders.

75. In the preparation of both documents account has clearly been taken of the recommendations of the Simon and Howard Robertson Reports. Both Codes are primarily intended to apply where the normal form of tendering based on schedules or bills of quantities is used and each recommends the use of selective tendering. Points of difference are:

- (*a*) The Scottish Code of tendering procedure makes reference to separate trades contracting;

(*b*) The Scottish Code assumes that the Scottish General Conditions of Contract will normally be used. In the English Code, the assumption is that the R.I.B.A. Form of Contract will normally be adopted. (Chapter 5 of this Report describes these Conditions of Contract, and a comparison between them is given in Appendix 7);

(*c*) The Scottish Code provides that after tenders have been opened the priced schedules of the three lowest tenderers shall be checked arithmetically for errors in extension and summation, and the contractor's tender price adjusted to take account of any such errors found. The Code also recommends that where obvious errors in pricing involving a substantial amount are discovered, the errors should be clarified before acceptance of the tender. Under the English Code, normally the priced bill of quantities of the lowest tenderer only is examined, the first object of the examination being the detection of errors of such extent as might cause the tenderer, when made aware of them, to withdraw his offer. Where a tenderer is prepared to stand by his tender in spite of an error the Code sets out the method of adjustment to the bill for the purpose of valuing variations only, and no alteration is made to the tender total.

76. If the unification of conditions of contract and methods of measurement which we recommend in Chapters 5 and 6 is achieved the virtual unification of the Codes of tendering procedure for building work will follow.

77. While the procedures recommended for competitive tendering for building work are the same in principle for Scotland and for England and Wales, there may be differences in the extent to which common principles are applied in practice.

78. It has been strongly represented to us by both building and civil engineering contractors that the recommended procedures for competitive tendering are not being properly observed; for example:

(*a*) That, in general, insufficient pre-tender information is available to the contractor.

(*b*) That there is disregard of the principles as to preplanning and the duration of the contract, recognised as essential especially in firm price tendering.

(*c*) That insufficient time is often given for the preparation of tenders, and this may lead to unrealistic or inflated tenders being received.

(*d*) That there is undue delay in the notification of the results of tendering, particularly on the part of local authorities and other public bodies. However caused, this makes difficulty for contractors when tendering for other work.

79. Departures from the accepted principles governing the placing of contracts, whether in Scotland or in England and Wales and irrespective of the system of contracting used, can clearly affect the efficiency of the industry, and it is in our view essential that these principles should be adhered to in practice.

80. Tendering procedure is primarily a matter for consideration by the Committee on the Placing and Management of Contracts for Building and Civil Engineering Work, but we have thought it appropriate to make reference to it in view of the substantial body of representations made to us during our enquiry.

CHAPTER 5

Conditions of Contract

81. Conditions of contract are the most important factors in determining the responsibilities of the various parties in the execution of the contract. We find considerable differences in the conditions applying north and south of the Border.

Standard Forms of Conditions of Contract

82. For building work there are separate standard forms of conditions of contract in general use in Scotland and in England and Wales. Building clients may modify these standard forms, or use other conditions of contract, so long as the Contractor carrying out the work agrees to accept the conditions proposed. For contracts for building work let by the Ministry of Public Building and Works and certain other Government departments special standard forms (C.C.C./Works 1 and 2) are in general use throughout Great Britain, and these forms are applicable also to civil engineering work. For civil engineering work generally, and for mechanical engineering and electrical engineering, there are standard forms of contract which can be used throughout Great Britain.

83. We have considered the difference between the Scottish and the English standard forms of conditions of contract for building work (other than C.C.C./Works 1 and 2) and also whether there seems to be a case for the adoption of one unified form. In engineering, standard conditions are already in use north and south of the border and we concluded that those conditions fell largely outwith our terms of reference. We deal, therefore, mainly with the conditions of contract for building work, but we comment later (paragraphs 107 to 111) on the engineering aspects.

Scottish standard form of contract for building work

84. The Scottish standard form of conditions of contract for building work is the "Regulations and General Conditions of Contract for Building Work in Scotland". The current edition is that negotiated by the Royal Incorporation of Architects in Scotland and the Scottish National Building Trades' Federation (Employers) and issued in 1954 under the authority of those bodies and with the approval of the Scottish Associations of local authorities. A supplement to the Scottish General Conditions of Contract provides for standard alterations and modification for use in contracts let by local authorities. (*Throughout our Report this document is referred to as "the Scottish General Conditions of Contract".*)

85. The Scottish General Conditions of Contract are in general use for building work in Scotland. The evidence available to us suggests that local authorities frequently adopt variations other than the standard variations, referred to in paragraph 84. We have no evidence as to the extent to which private building clients depart from these conditions in certain particulars, but it might be noted that the Code of Procedure for Competitive Tendering for

Building Works in Scotland, referred to in Chapter 4, recommends that the Scottish General Conditions of Contract should be applied with as few modifications as possible.

English standard form of contract for building work

86. The standard form of contract for building work in general use in England and Wales is the Agreement and Schedule of Conditions of Building Contract, commonly referred to (and so described throughout this Report) as "*the R.I.B.A. Form of Contract*". We should make it clear that any reference in our Report to the R.I.B.A. Form of Contract is a reference to the edition which became effective on 1st April, 1963. It was prepared by the Joint Tribunal on the Standard Form of Building Contract, and is issued under the sanction of the following members of the Joint Tribunal:

Royal Institute of British Architects
National Federation of Building Trades Employers
Royal Institution of Chartered Surveyors
The County Councils Association
Association of Municipal Corporations
Metropolitan Boroughs Standing Joint Committee
Urban District Councils Association
Rural District Councils Association

87. The R.I.B.A. Form of Contract is issued in four editions:

Private Edition (with quantities)
Private Edition (without quantities)
Local Authority Edition (with quantities)
Local Authority Edition (without quantities)

Differences in the standard forms

88. Before describing the main differences between the Scottish and the English standard forms of contract, we should make it clear that we recognise that the conditions cannot be considered in isolation. They are to some extent the product of other procedures—e.g., the method of letting contracts by separate trades or by all trades and the system of measurement—which themselves show differences as between traditional practices in Scotland and in England and Wales, and on which we comment in Chapters 4 and 6. Our comments and recommendations on the different standard forms of contract must, therefore, be read in the light of what we say on the other basic contracting procedures.

Drafting bodies

89. It is important to note in the first place the difference between the arrangements for the preparation and issue of the standard forms of contract. The R.I.B.A. Form of Contract was prepared by and is issued with the approval of the main sectors of the industry—architects, surveyors and contractors—and the local authority Associations, whose constituents are responsible for a very large part of all the building work done in this country. The architects and the contractors only were concerned with the preparation of the Scottish General Conditions of Contract, although the approval of the local authority Associations was obtained. We shall have more to say later on the subject of the preparation of future standard forms of contract.

Differences in conditions

90. There are a number of differences in the detailed conditions as between the two standard forms of contract, of which the more important are as set out in Appendix 7.

91. We would say that the fundamental differences between the R.I.B.A. Form of Contract and the Scottish General Conditions of Contract are:

(*a*) The R.I.B.A. Form of Contract is now framed on the basis that the contractor and the client are equal parties, willingly entering into an agreement for the execution of and payment for the work. The Scottish General Conditions of Contract are based rather on the footing that the contractor is bound by his offer from the moment it is made, to ensure that he does carry out the contract as laid down, and to penalise him if he does not.

(*b*) The R.I.B.A. Form of Contract is primarily concerned with all trades contracts (although it can be and is used for separate trades work). The Scottish General Conditions of Contract, in accordance with the Scottish tradition of separate trades contracting referred to earlier in this Report, are more suited to that method of contracting and have, historically, been developed for basically separate trades practice, although provision is made for both methods.

(*c*) Under the R.I.B.A. Form of Contract the power of the architect to give instructions is limited and the quantity surveyor is given a status not accorded him in the Scottish General Conditions of Contract.

Specification

92. Under the Scottish General Conditions of Contract, the contract documents include the conditions of contract, the contract drawings, the specification, the tender and the schedule of quantities. Under the R.I.B.A. Form of Contract the specification is not a separate part of the contract documents where a bill of quantities is used.

Unification

93. A considerable volume of representation made to us dealt with the question of conditions of contract, and the general body of opinion was in favour of the preparation and adoption of a standard form for building work, which would be applicable throughout Great Britain.

94. We have considered the existing documents, in relation to current practices, probable future trends, and the growing tendency for the construction industry to operate on a national basis. Our conclusion is that it would be of considerable advantage to have a standard form of conditions of contract for building work, which could be used throughout the country, and we recommend accordingly.

95. We realise that no standard conditions of contract can be mandatory in their application. For this reason, it is desirable that any standard form framed as we suggest should be as widely acceptable as is possible to contractors and to building owners, both in the public and private sectors. We therefore recommend, in paragraph 101, that the drafting of a standard form of conditions of contract should be undertaken by a fully representative body.

Content of standard form

96. Our recommendation is that the R.I.B.A. Form of Contract should be used as the basis from which drafting should proceed. Our main reasons for making this recommendation are first that the R.I.B.A. Form of Contract appears to be more in tune with present day practices, particularly with the use of all trades as distinct from separate trades contracting. We also believe that the R.I.B.A. Form of Contract, in its general approach, and, for example, in its provisions governing the making of payments, is more equitable than the Scottish General Conditions of Contract. In this we do not suggest that a national standard form of contract need follow rigidly the style and wording of the R.I.B.A. Form of Contract. We suggest only that this offers the best starting point for the drafting of a standard form and that there may be features of the Scottish General Conditions of Contract and of other forms which could with advantage be incorporated.

97. We would, however, regard as of first importance in relation to the finance of building, to which we have referred in Chapter 2, the difference as regards payments to contractors between the R.I.B.A. Form of Contract and the Scottish General Conditions of Contract.

98. In particular, the provisions of the R.I.B.A. Form of Contract relating to retention money and to payments in respect of variations, referred to in more detail in paragraphs 3 and 4 of Appendix 7, must have considerable advantage over the comparable provisions of the Scottish General Conditions of Contract. The smaller amount of retention money, the shorter period of retention, and the immediate valuation of variations must together speed up the flow of money and expedite final settlements, to the benefit of the whole industry, including the professions, and, indeed, the building owners.

99. We therefore recommend that in the framing of a national standard form of conditions of contract particular regard should be paid to this question of the making of payments and that, in so far as the conditions incorporated in the R.I.B.A. Form of Contract are likely to secure a speedier flow of money and quicker settlement than those of the Scottish General Conditions of Contract, then, in the interests of improving the financial stability of the industry, the former should meanwhile prevail.

100. As we have mentioned in paragraph 92, under the R.I.B.A. Form of Contract the specification is not a contract document when bills of quantities are used. We are convinced that an adequate specification, governing the quality of the work to be done, is an essential adjunct to the conditions of contract themselves, governing the legal responsibilities of the parties. We, therefore, recommend that the Scottish practice whereby the specification is part of the contract documents should be continued in a national standard form of conditions of contract for building work.

Drafting of national standard conditions

101. The manner in which standard conditions of contract for building work should be framed is a matter for the appropriate drafting bodies. We recommend, therefore, the setting up of a national organisation representative of all sections of the industry, of the local authorities, and of Government departments, to examine this question in detail. The drafting body should be composed of representatives of the architects, the surveyors, the contractors, the local

authorities and the Government departments—in each case with representation from both the Scottish and the English organisations.

102. We regard as essential the participation of the Government departments in the drafting of a national standard form of contract. If there is to be unification of conditions of contract for building work throughout Great Britain, it would be unthinkable that the Government departments should be out of step with the rest of the country—although we recognise in paragraph 105 that a unified form of contract may have to incorporate an agreed list of variations suitable for use by public authorities.

103. In making the recommendations in paragraphs 94 to 101, we appreciate that their implementation might have to be carried out by stages. In the shorter term, regard must be had to the fact that the R.I.B.A. Form of Contract has only recently been revised and there would no doubt be reluctance to consider its further revision at this early stage. The revision of the Scottish General Conditions of Contract themselves is, however, a matter of urgency. It is likely therefore that, although some time might elapse before a standard form of contract for use throughout Great Britain could be framed, the revision of the Scottish General Conditions of Contract may well in the meantime be put in hand under normal arrangements. We therefore suggest that unification of the conditions of contract should be carried out in two stages. In the first stage, the revision of the Scottish General Conditions of Contract—as far as is practicable now on the basis of the R.I.B.A. Form of Contract—should be carried out by a drafting organisation which should be expanded to comprise representatives of the architects, surveyors, and contractors, the Scottish local authority Associations, and the Scottish Government departments. In the second stage, the national drafting body, the establishment of which is recommended in paragraph 101, should be set up to prepare a standard form of contract for use throughout Great Britain.

Legal aspects

104. In recommending the preparation and adoption of a national standard form of conditions of contract for building work, we are aware that account would have to be taken of differences in the law of Scotland and England. In particular, attention might have to be given to the legal aspects of tendering procedure, to the method of dealing with retention monies, and to the procedure governing payments to sub-contractors, which are mentioned in items 1, 3 and 8 of Appendix 7. There is also a legal difference in relation to arbitration. In England and Wales arbitration is governed by the Arbitration Act, 1950, whereas in Scotland arbitration is at common law. There seems, however, to be no fundamental reason why it should not be possible to frame a national standard form of conditions of contract, based, as far as possible, on unified principles and taking account where necessary of essential differences of law. The Institution of Civil Engineers standard form of contract, and the Government forms C.C.C./Works 1 and 2 have for some time been in use in both Scotland and England and Wales, without difficulty.

Variations from standard conditions

105. We feel that much of the advantage of a national standard form of contract would be lost if substantial variations were commonly made. For example, we can see no reason why local authorities should commonly adopt

variations other than the standard local authority variations. We appreciate that Government departments, local authorities and other public bodies have special responsibilities and that their contracts may, therefore, require the insertion of special provisions—of which the Fair Wages Clause is an obvious example. Nevertheless, standardisation of the conditions of contract should still be possible and, if there are good reasons why Government departments, local authorities and other public bodies should incorporate special conditions, then these could be in the form of an appendix, setting out an agreed minimal list of variations from a generally accepted standard form. Where any special conditions are found to be necessary for a particular job, whether in the public or the private sector, these should be brought to the notice of the contractor and it should be made clear that they apply only to the particular contract in hand.

Sub-contracts

106. Strong representations were made to us that there should be for Scotland a standard form of conditions of sub-contract, to avoid the use of forms of sub-contract individual to the main contractor. There is at present no such Scottish standard form, but for England and Wales there are standard forms of sub-contract issued and approved by the National Federation of Building Trades Employers and the Federation of Associations of Specialists and Sub-Contractors. In view of the growing trend in Scotland towards the use of all trades contracting, we feel that a standard form of sub-contract would be of considerable advantage. We therefore recommend that there should be a standard form or forms of sub-contract which should be linked to and should reconcile as closely as possible with the standard conditions applicable to main contracts.

Engineering

107. So far in this Chapter we have been considering the standard forms of conditions of contract for building work, which are different in Scotland and in England and Wales and therefore fall clearly within our terms of reference. As we have already noted, there are standard Conditions of Contract for mechanical and electrical engineering, recommended by the Institution of Mechanical Engineers, the Institution of Electrical Engineers and the Association of Consulting Engineers.

108. In view of the complexity of much modern building, in which the traditional building operations and mechanical and electrical engineering operations are closely linked, the adoption of a form of contract which would be applicable to all these services as well as to building work as such would be of very considerable advantage.

109. In civil engineering, the majority of contracts both in Scotland and in England and Wales are carried out under the I.C.E. Conditions of Contract and we find no significant difference in practice. It appears to us, however, that in much of the work now being undertaken by the construction industry there is no clearly defined line of demarcation between building and civil engineering, and we stress our view that it would be desirable to have one standard form of contract applicable to both building and civil engineering work.

110. Indeed, although unification of the conditions of contract for building work must have priority, we regard as the eventual aim the preparation of one

standard form of contract which would be applicable, throughout Great Britain, to all construction work—building, civil engineering, the various engineering services, or any combination of these. For the preparation of such a document, or of a form of contract applicable to building and mechanical and electrical engineering, or to building and civil engineering, the national drafting body proposed in paragraph 101 would have to be expanded to include representatives of the appropriate sections of the industry.

111. There seems to be no reason why it should not be possible to prepare such conditions of contract.

CHAPTER 6

The Measuring of Building Work

112. In the operation of a building contract one of the principal procedures is usually the production of a schedule or bill of quantities and for this, in order that all contractors should be pricing on the same basis, it is necessary to have a recognised method of measuring the work to be done. There are two standard systems—in Scotland, the Scottish Mode for the Measurement of Building Works (referred to as "the Scottish Mode of Measurement") and, in England and Wales, the Standard Method of Measurement of Building Works (referred to as "the Standard Method of Measurement"). There is also in use for housing work in England and Wales the "Code for the Measurement of Building Works in Small Dwellings", which is a simplified version of the Standard Method of Measurement. No similar simplified code exists in Scotland.

113. The Scottish Mode of Measurement is the responsibility of the Joint Standing Committee of Architects, Surveyors and Building Contractors in Scotland (Appendix 4, paragraph 18). The English Standard Method of Measurement is authorised by agreement between, and issued by, the Royal Institution of Chartered Surveyors and the National Federation of Building Trades Employers, working through the Standing Joint Committee for the Standard Method of Measurement.

114. To take the place of local modes then being used in various parts of Scotland, the Scottish Mode of Measurement was introduced during the first world war on a trade by trade basis, each trade being complete in itself. So successfully did it serve the building industry in Scotland, which operated by way of separate trades contracting, that it was not until 1951 that revision of the original Mode was considered to be justified. Since then the Joint Standing Committee has, through sub-committees, been engaged in revising the mode, again dealing with one trade at a time. A few trades are still using the original edition.

115. We have had a considerable body of evidence on the question of measurement, and the representations have been generally to the effect that the existence of two separate systems of measurement is undesirable. Sir Harold Emmerson in his Report (paragraph 46) said that the Scottish Mode of Measurement was not suitable for all trades contracting. To a limited extent we would accept this criticism.

116. The long history of the Scottish Mode of Measurement, extending over some 35 years without revision, is evidence of its suitability for building work in Scotland so long as the work was carried out under the traditional Scottish separate trades contracting arrangements. As we have noted earlier (Chapter 4), however, there has been in recent years a marked change-over from separate trades to all trades contracting. This trend will, we feel sure, be continued, and there is little doubt that when used in all trades contracting, for which it was not designed, the Scottish Mode of Measurement has certain defects, particularly those to which we now refer.

117. Firstly, the Scottish Mode of Measurement provides for "general items" in each trade, which items include temporary work, so that the responsibility for that work is spread among the various sub-contractors. There is no provision for a preliminary schedule or bill dealing with the requirements of the conditions of contract, temporary work, etc., which should be the responsibility of the main contractor. This is essential in the proper operation of an all trades contract. Secondly, the Scottish Mode of Measurement requires that specific details be given, in the schedule of quantities, for temporary services, the nature of which should, we consider, be for the contractor to decide for himself.

118. The Standard Method of Measurement, in its present form, is generally simpler and more consistent than the Scottish Mode of Measurement, the obvious reason being that the former was first produced and has been revised as a single document. In the latest revision of the Standard Method of Measurement the unit of measurement is the same throughout any one section. This is not so in the Scottish Mode.

119. Apart from these points there is remarkably little criticism of the Scottish Mode on broad principles, so far as the measurement of the work involved in the building is concerned. While it is frequently alleged that time is wasted in measuring trivialities, this criticism is also levelled against the Standard Method of Measurement. We agree that the Standard Method of Measurement will sometimes produce a shorter bill of quantities than the Scottish Mode, but the latter is more explicit and helpful to the contractor in pricing and carrying out the work, in that the schedule enables him to visualise its nature and extent.

120. Previous suggestions have been made that there should be a unified method of measurement throughout Great Britain. Efforts were made about 1930 to achieve this, but at that time the differences between the Scottish Mode of Measurement and the Standard Method of Measurement were such that negotiations broke down. With the periodic revision of the Standard Method of Measurement, which is now in its Fifth Edition, it has tended to come more into line with present Scottish practice, and methods are now incorporated in the former which were in the original Scottish Mode. For example, the Standard Method of Measurement in earlier editions measured brickwork in rods, and slating, roof-boarding, flooring, etc., in squares, units which are now abandoned in favour of square yards or square feet.

121. We are convinced of the desirability of the introduction, as soon as possible, of a single method of measurement applicable throughout Great Britain. We accordingly recommend that the aim should be the preparation and adoption of such a method, which would incorporate the best features of the two existing methods. Since the current edition of the Standard Method of

Measurement has only recently come into use, it would be unrealistic to propose its immediate amendment. We therefore recommend that as an interim step the Standard Method of Measurement, in its present form, should be adopted in Scotland. This should only be done on the assurance that, when the Standard Method of Measurement is next revised, full consideration would be given to representations put forward by the industry in Scotland, and that there would be adequate Scottish representation on the drafting and revising body.

122. We would also recommend that at the time of such revision a real effort be made to cut down the number of items which at present have to be measured under both methods. Quantity surveyors, both in Scotland and England, have in the latest revisions set out with the hope of achieving this, but contractors appear hitherto to have had some concern that, without the information which they get from separate labour items, many of which have given rise to the criticism of measuring trivialities, the bill or schedule might not give sufficient data to enable them to price the principal items accurately.

123. We think that if these recommendations are accepted the industry in Scotland will be in a much stronger position to reap the benefit of the use of computer scheduling which may well take big strides forward in the near future and which would otherwise prove too costly for use in Scotland if scheduling on the Scottish Mode were to be retained.

Civil engineering

124. In this Chapter we have considered only the systems of measurement for building work. In the case of civil engineering work there is a standard method of measurement of civil engineering quantities which is in common use throughout Great Britain (as is the case in relation to the standard civil engineering Conditions of Contract referred to in Chapter 5). We have not, therefore, felt it incumbent on us to examine the civil engineering method of measurement.

125. It has been suggested to us that some civil engineers are now employing independent quantity surveyors, and that this may well lead to the application of the quantity surveying techniques of cost planning at the design stage, and cost control during the execution of civil engineering work, such as are now widely applied to building work. We welcome this as evidence of a move towards unification of practices in building and civil engineering.

CHAPTER 7

Building Materials and Techniques

Building Materials

126. In his report (paragraph 43) Sir Harold Emmerson commented in the following terms on the supply of building materials in Scotland:

> "Another factor which can affect conditions in Scotland is the supply of building materials. Most building components come from across the Border, and both distributors and contractors complain of delays. This seems to apply particularly to household fitments and ironmongery coming from the Midlands. Without more detailed enquiry it is not possible to say where the fault lies."

127. Although we have had no great body of evidence on this point, it has been suggested to us that in general the supply of materials from within Scotland has been inadequate to meet demands and that the necessity to import from England results in delays in delivery and increases in cost. The Scottish National Building Trades' Federation (Employers) commented as follows:

> "Architects too frequently specify standard materials regardless of whether or not they may be readily available, and without regard to their cost, when equally suitable materials may be more readily and more economically available locally. The great volume of materials, particularly those required in new building operations, are imported from the south, and Scottish contractors are at a disadvantage with their colleagues over the Border in the placing and fulfilling of orders. The needs of the industry in Scotland are not so well supplied as they were previously. The absorption of smaller manufacturing firms in Scotland by "octopus" concerns and the centralisation of manufacturers in the south has deprived the industry in Scotland of ready sources of supply, and encouragement should be given to the re-establishment of these businesses in aid of the Scottish economy."

128. We are concerned with differences between organisation and practices in Scotland and those in England and Wales, and not with the broad economic and industrial prosperity of Scotland—important as that is—and we, therefore, confine our consideration of the question of supply of building materials to its effect on the efficiency of the industry in Scotland.

129. In our consideration of this question we have been helped by study of the report prepared in 1946 by the Building Materials Committee of the Scottish Council (Development and Industry) and by a memorandum which we received from the Committee re-appraising that report. In 1949, the Building Research Station set up a Scottish Laboratory with its own advisory committee, to study particularly problems relating to the effect of Scottish climatic conditions on building materials and forms of construction.

130. By comparison with England and Wales, Scotland is not well off in many of the raw materials processed for use in construction work. Clays for brick and tile making are not available either in the quantity or quality found in England. Lime and gypsum plaster have to be imported, and until recently as much as 75 per cent. of the cement used in Scotland was brought from England. Deposits of sand and gravel suitable for concrete are often further from the main centres of constructional activity than is the case south of the Border.

131. While it has been represented to us that most of the materials and many of the components used in building are, in fact, produced or processed to some extent in Scotland, it is clear that production is in many cases insufficient to meet demands and that the building industry in Scotland, particularly in respect of manufactured components and fittings, is largely dependent on supplies from England. On the other hand, there are some materials such as sanitary ware which are sent from Scotland to England in considerable quantities.

132. It is to be expected that building materials will be produced in areas convenient to the source of the raw materials or in areas where large concentrations of the manufacturing industry have been built up to give efficient and economical output. The essential thing is that the production of materials in Great Britain as a whole should be so organised as to be able to supply the building industry, wherever operating, with the necessary materials quickly and economically.

133. We cannot, therefore, find fault in principle with the transportation of building materials from one part of Great Britain to another so long as there are good reasons (such as the source of supply of raw materials or the economic organisation of the production industry) and provided that there is no discrimination, either in price or in delivery date, against the building industry in Scotland.

134. Nevertheless, reasonable local availability of building materials must, in principle, clearly be of advantage in cost of materials, speed of delivery and efficiency in construction work. We would, therefore, recommend that, where there is no reason why production in Scotland is not economically practicable, every effort should be made to increase the output of building materials and components there. It is not clear, for example, why a country with a long tradition of the production and working of iron and steel should not produce substantial quantities of the ironmongery and metal windows required for the building programme. Glass is another common building material which is not now produced in Scotland and has to be brought from England. As we have said earlier in this Report, the demand for building in Scotland is growing and if producers can be assured of a stable long-term programme there is no reason why production of materials in Scotland should not expand.

135. Increased production in Scotland of building components, as distinct from materials, and especially of pre-fabricated components with limited economical transport range, will be of special importance if the current movement towards the use of industrialised building systems is to develop in Scotland. There should also be scope for Scottish participation in the manufacture and processing of the newer building materials such as plastics.

136. On the question of specification, we consider that in the interests of efficiency the architect must be free to specify materials on the basis of quality, cost, and availability, irrespective of source. To assist him in so doing manufacturers and distributors must make available the fullest information on their products, including not only types and dimensions but also such matters as the results of tests, delivery periods and an indication of price range. We are aware that steps have been taken to standardise the presentation of information on building materials and methods, but we feel that more might be done to assist architects and engineers in their assessment of the possibilities of new materials and techniques.

Building Techniques and Building Standards

137. While it is not possible to make a strict comparison between practices in Scotland and those in England and Wales, since there are local variations in each country, there are what might be described as typical Scottish practices which differ from the equivalent typical English practices. The design and construction of buildings and methods of working can vary as a result of climatic conditions, of requirements of building and water authorities, of traditional trade practices, and, to some extent, because of the availability or non-availability of basic materials. The work of the Scottish Laboratory of the Building Research Station, referred to in paragraph 129, has been broadened to include the study of Scottish building techniques and, latterly, the effect of these on the development of industrialised methods of building.

138. In traditional building work there are a few techniques which are peculiar to Scotland and adopted solely on account of climatic conditions. The provision of sarking on slated or tiled roofs, the use of cavity construction for

external walling or of a strapped-out lining to solid walling, and the extensive use of external renderings are, we feel, justified as measures taken to deal with the combination of high wind and rain commonly experienced in many parts of Scotland.

139. With the introduction of new materials and techniques and the increasing use of pre-fabrication there is growing uniformity in building techniques as between Scotland and England. In the past, however, there have been cases where forms of construction used with success in the south have shown weaknesses when exposed to the Scottish climate and we would stress the need for thorough examination of new systems of construction before their general adoption in Scotland. In particular we refer to the problems of moisture penetration and condensation which we are advised are more acute in Scotland than in many parts of England and Wales, especially where the newer and lighter forms of construction are employed.

140. In relation to building drainage there is considerable difference between Scottish and English practice. It is, for example, common in England for waste water to be discharged into open gullies instead of being conveyed to the drain, as in Scotland, by means of a ventilated stack. There are differences too in the arrangements for access to underground drains and in the construction of manholes. We have seen no evidence to convince us of the necessity for these differences, which must clearly have disadvantages in the production of fittings.

141. At present, standards both in Scotland and in England and Wales are regulated by building byelaws made by individual local authorities and by water byelaws made by water authorities. Model Byelaws have been issued by the Department of Health for Scotland (now the Scottish Development Department), and by the Ministry of Housing and Local Government, and we understand that most authorities both in Scotland and in England and Wales have adopted them.

142. In Scotland, building byelaws are to be replaced by the Building Standards Regulations*, recently made by the Secretary of State for Scotland under the Building (Scotland) Act, 1959, so that there will be a uniform code of building standards applicable throughout the country. This we regard as of great importance to the efficiency of the building industry. These Regulations will not apply in England and Wales, but separate Regulations are in course of preparation. We would strongly recommend that, in the interests of efficiency, the codes in the two countries should be as uniform as is possible.

143. The Building Standards Regulations mentioned in paragraph 142 will not deal with water supply, and it is in plumbing and water supply that practices in Scotland differ most from those in England and Wales, and indeed as between different areas within Scotland and England. Although as we have said most authorities have adopted the Model Water Byelaws there are at present many local variations, both in the content of the byelaws and in their application. This, together with the practice, common in Scotland and not unknown in England, of requiring the testing and stamping of fittings, can cause considerable delay and inconvenience.

144. We appreciate that water supply fittings must necessarily be suited to the pressure and other variable conditions of supply, but we consider that the differences in standards and requirements are wider than necessary. We can see

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* S.I. 1963 No. 1897 (S.102), laid before Parliament on 11th December, 1963, to come into operation on 15th June, 1964.

no good reason for continuation of the requirement that fittings should be tested and stamped separately by water authorities, provided that they are made to a British Standard allowing for ranges of performance to suit variable conditions of supply and are marked or stamped accordingly by the manufacturers. We are sure that rationalisation of water supply standards in this way would be of very considerable benefit both to the supply industry and to the building industry itself.

145. The introduction of Building Standards Regulations in Scotland has shown the way to unification of standards for building in replacement of local building byelaws and we would strongly recommend that similar Regulations should be made, or the Regulations extended, to cover water supply as well. The provision of water supply is as much an integral part of building work as is the provision of any other service, and there seems to be no good reason why building operations should be governed partly by a national code of standards and partly by local byelaws.

146. We would regard as of first priority the introduction of Building Standards Regulations, such as will soon be in use in Scotland, to replace local building byelaws in England and Wales. Also of urgency is the need for water supply regulations to replace the local byelaws which are still in force both in Scotland and in England and Wales. In the long-term, we are convinced, the ideal is a whole Code comprehending all building operations and services, which would be nationally applicable with whatever stated variations may be essential to meet local conditions. We understand that the relevant statutory provisions in Scotland and in England and Wales are such as to prevent unification of the Building Regulations, or the production of a national comprehensive Code. We recommend that consideration be given to adjustment of any statutory impediment of this kind.

147. Our attention has been drawn to some differences in craft practices as between Scotland and England both in relation to the range of work carried out and to the method of working. It is common in Scotland for slaters to undertake external rendering and roughcasting and for bricklayers engaged on external walling to work "overhand" from a working platform inside the building, instead of from scaffolding outside the building.

148. Training of apprentices in Scotland is, however, carried out under the same general syllabus as in England and Wales, and craftsmen in each country are required to use their skills in both traditional and new ways. We have no evidence to suggest that differences in craft practices have any significant effect on the relative efficiency of building in the traditional forms of construction. Nor have we seen anything to suggest that, in relation to the rapidly developing newer forms of construction, such differences involve any greater adjustment for the Scottish craftsman than for his English counterpart, or any greater obstacle to the use of new methods.

W. McEwan Younger,
Chairman
P. A. Barns-Graham
Stuart Clink
A. G. Jury

T. McCalmont
A. H. Macdonald
G. L. Orchard
Alexander Sim
E. R. Webster

J. Kerr
A. I. D. Macdonald } *Joint Secretaries*

27th December, 1963.

APPENDIX 1

List of bodies, firms and individuals who gave written evidence to the Working Party

Architecture Research Unit, Edinburgh University
Association of Consulting Engineers
Association of Heating, Ventilating and Domestic Engineering Employers (Scottish Branch)
Brydon, N. M., M.B.E., B.Sc., M.I.C.E., M.I.Struct.E.
Building Materials Committee, Scottish Council (Development and Industry)
Federation of Associations of Specialists and Sub-Contractors (Scottish Board)
Federation of Civil Engineering Contractors (Scottish Section)
H.M. Superintending Inspector of Factories, Scotland
Institute of Builders
Institute of Clerks of Works of Great Britain, Incorporated (Scottish Chapter)
Institution of Municipal Engineers (Scottish Branch)
Joint Standing Committee of Architects, Surveyors and Building Contractors in Scotland
Ogilvy, Alistair D., B.Sc.
Reid, D. M., and Smith, Chartered Quantity Surveyors
Royal Incorporation of Architects in Scotland
Royal Institution of Chartered Surveyors (Scottish Branch)
Scottish Building Trades Distributors Liaison Committee
Scottish Federation of Plumbers' and Domestic Engineers' (Employers) Associations
Scottish Joinery and Door Manufacturers' Association
Scottish National Building Trades' Federation (Employers)
Scottish Structural Steel Association
Scottish Timber Merchants' and Sawmillers' Association

APPENDIX 2

List of bodies who gave oral evidence to the Working Party

Building Research Station of the Department of Scientific and Industrial Research
Federation of Associations of Specialists and Sub-Contractors (Scottish Board)
Institute of Builders
Institute of Clerks of Works of Great Britain, Incorporated (Scottish Chapter)
National Federation of Building Trades Operatives (Scottish Regional Council)
Royal Incorporation of Architects in Scotland
Scottish Building Trade Distributors Liaison Committee
Scottish Federation of Plumbers' and Domestic Engineers' (Employers) Associations
Scottish National Building Trades' Federation (Employers)
Scottish Timber Merchants' and Sawmillers' Association

APPENDIX 3

TABLE 1

Analysis of Firms by Number of Operatives

April, 1962	*Scotland*	*England and Wales*
1–19	5,974 (86·5%)	72,270 (89·5%)
20–99	758	7,110
100–499	140	1,158
500–999	16	114
1,000 and over	11	68
	6,899	80,720

TABLE 2

Analysis of Firms by Trade Classification

April, 1962	*Scotland*	*England and Wales*
General Builders	1,283 (18·6%)	36,334 (45·0%)
Building and Civil Engineering Contractors	236 (3·4%)	2,891 (3·6%)
Civil Engineering Contractors	87 (1·3%)	1,066 (1·3%)
Plumbers	1,048 (15·2%)	7,897 (9·8%)
Carpenters and Joiners	1,296 (18·8%)	4,507 (5·6%)
Painters	1,354 (19·6%)	15,163 (18·8%)
Roofer	441 (6·4%)	1,163 (1·4%)
Glaziers	59 (0·9%)	237 (0·3%)
Plasterers	278 (4·0%)	2,913 (3·6%)
Heating and Ventilating Engineers	40 (0·6%)	636 (0·8%)
Electrical Contractors	424 (6·1%)	4,333 (5·4%)
Constructional Engineering Contractors	36 (0·5%)	398 (0·5%)
Others	317 (4·6%)	3,182 (3·9%)
	6,899 (100%)	80,720 (100%)

APPENDIX 4

Organisation of the Construction Industry

Professional Organisations

Architects

1. Throughout Great Britain no person can describe himself as an Architect unless he has obtained registration under the Architects (Registration) Act 1931. The Royal Incorporation of Architects in Scotland is, like the Royal Institute of British Architects, a body established in its own right by Royal Charter. It is completely autonomous in Scotland but is an allied society of the R.I.B.A. and receives from the latter a contribution by way of block grant. There is very close liaison between the two bodies and the R.I.A.S. is, in fact, represented on the R.I.B.A. Council and on many of its committees, including the Professional Practice Committee, the Board of Architectural Education, and the Registration Committee.

2. The R.I.A.S. works in close relationship with the Universities and the Architectural Schools in Scotland, organising a number of annual competitions open to students attending these. The R.I.A.S. does not hold examinations for granting of its qualifications, but it elects Fellows and Associates from suitably qualified applicants. The R.I.B.A. professional qualifications, the examinations for which can be taken in Scotland under the auspices of the R.I.A.S. are universally recognised.

Civil Engineers

3. The Institution of Civil Engineers is the national professional body representative of the civil engineers. There are two Scottish Associations (the Edinburgh and East of Scotland Association and the Glasgow and West of Scotland Association) which appoint a member to the main Council of the Institution. We understand that otherwise control of the Institution's affairs is on a wholly national basis.

Quantity Surveyors

4. The Royal Institution of Chartered Surveyors, which has a Scottish Branch, is the principal national body in the field of surveying and its membership covers all branches of the surveying profession, including quantity surveyors, building surveyors, valuers, land agents, etc. Control of the affairs of the Institution is vested in its Council. Quantity surveyors are substantially in the majority in the Scottish Branch. Control of the Scottish Branch is exercised by the Scottish Executive Committee, made up of representatives of each Section, and on the quantity surveying side there is virtual Scottish autonomy on matters relating to the Mode of Measurement and fee scales. As regards qualifications, the Institution's examination curricula are used in Scotland, with adaptations to suit Scottish law and practice. There is close co-operation between the Scottish Branch and its Headquarters and the Branch is represented on the Council of the Institution.

Other professional bodies

5. There are other professional bodies concerned with various aspects of building and civil engineering work—for example, the Association of Consulting Engineers, and the Institutions of Mechanical, Electrical, Heating, Structural, Highway and Municipal Engineers. All of these bodies are national, with Scottish Branches or Committees.

Employers' Associations

Building

6. For the purpose of this Report the most important of the trade organisations on the building side of the industry are, in Scotland, the Scottish National Building Trades' Federation (Employers) and, in England and Wales, the National Federation of Building Trades Employers. Until recently, the two Federations were separate but during the course of our enquiry the Scottish Federation became affiliated to the National Federation, which is now therefore representative of contractors in most building trades throughout Great Britain.

7. There are many other associations of contractors, either in specific trades or grouped in local federations (e.g., the Aberdeen Master Builders' Association, which comprises a number of separate associations in different trades). Some of the other associations are affiliated to the Federation (paragraph 6), and others are not so affiliated. Among the more important of the non-affiliated organisations of contractors in individual trades are the Scottish Federation of Plumbers' and Domestic Engineers' (Employers) Associations, the National Federation of Master Painters and Decorators in Scotland, and the Electrical Contractors' Association of Scotland, which have their counterparts in England and Wales, and the Association of Heating, Ventilating and Domestic Engineering Employers, which is a national body with a Scottish branch.

8. The sub-contractors and specialist sub-contractors also have a trade association—the Federation of Associations of Specialists and Sub-Contractors—which represents its membership throughout Great Britain. The Federation has a Scottish Board, which has a considerable degree of autonomy, representing the interests of Scottish firms. In their evidence to us the Federation stressed that its membership was comprised almost wholly from specialist trades, as distinct from what might be described as the traditional sub-contracting trades such as joiners and plumbers. In engineering services there is the Committee of Associations of Specialist Engineering Contractors, comprising the British Structural Steelwork Association, the Heating and Ventilating Contractors' Association, the Electrical Contractors' Association (Inc.) and the Electrical Contractors' Association of Scotland.

Civil engineering

9. The Federation of Civil Engineering Contractors is a national body. There are nine sections within the Federation, of which one is the Scottish Section, and the affairs of the Federation are managed by a Council elected by the sections. The activities of the individual sections are confined to local matters.

Operatives' Associations

Building

10. The National Federation of Building Trades Operatives is the national body representative of all building trade operatives, with the exception of glaziers, and is a Federation of trade unions concerned with various trades involved in building work. The Federation is representative of the building operatives in the negotiation machinery and its Scottish Regional Council fulfils that function in Scotland.

Civil engineering

11. There is no formal federation of the civil engineering operatives, as there is for the building operatives, but the trade unions are represented on the Conciliation Board described in paragraph 16 of this Appendix.

Negotiation

Building

12. The arrangements for negotiation of wages and conditions of work in the building industry are, at present, very complex. The main negotiating bodies are the Scottish National Joint Council for the Building Industry and the equivalent body for England and Wales, the National Joint Council for the Building Industry. The constituent bodies are, in Scotland, the Scottish National Building Trades' Federation (Employers) and the Scottish Regional Council of the National Federation of Building Trades Operatives; and the National Federations of Employers and Operatives in England and Wales. At present the two Councils are separate, although in practice settlements on wages and major conditions made by the National Joint Council have in general been followed in Scotland. An important exception was the 40-hour week agreement in the building industry in Scotland. As a result of its recent affiliation to the National Federation, the Scottish National Building Trades' Federation (Employers) has, however, given statutory notice of its intention to withdraw from the Scottish National Joint Council, as from January, 1964 (see Chapter 3, paragraph 50).

13. A significant feature of the arrangements for negotiation is that the Joint Councils do not cover all trades which are directly concerned with building. For example, the Scottish plumbing, electrical contracting, painting and glazing trades are outwith the scope of the Scottish National Joint Council in negotiation of wages and working conditions. In the plumbing trade (save in respect of plumbers employed by building firms which are members of the S.N.B.T.F.(E)) negotiation is carried out directly between the employers and the opera-

tives. In electrical contracting there is direct negotiation between the operatives and the contractors' Association. In the painting trade, there is the Scottish Painting Council, which is responsible for negotiation on wages and conditions. In glazing, although the employers' Association is affiliated to the Scottish National Building Trades' Federation (Employers), the operatives' Union is not affiliated to the operatives' Federation. Negotiation in this trade is therefore directly between employers and operatives, but we understand that in practice settlements agreed by the Scottish National Joint Council are normally followed. There is also a Scottish National Joint Committee for the Plastering Trade, but we are informed that this Committee deals only with purely trade questions and that for wages and conditions the Scottish National Joint Council settlements are followed.

14. The arrangements for the trades referred to in paragraph 13 are rather different in England and Wales. There is a National Joint Industrial Council for the Electrical Contracting Industry and one for the Glazing Trade, but the latter does not, we understand, negotiate wages and conditions of employment, these being dealt with by the National Joint Council for the Building Industry referred to in paragraph 12. Negotiation on wages and conditions of employment in the plumbing, painting and plastering trades in England and Wales is also carried out by the National Joint Council and there is no English equivalent of the Scottish Painting Council or the Scottish National Joint Committee for the Plastering Trade.

15. In heating and ventilating, there is no formal Joint Council arrangement, and negotiation is carried out, on a national basis, between the employers' and the operatives' Associations.

Civil engineering

16. In the case of civil engineering, there is one national body—the Civil Engineering Construction Conciliation Board for Great Britain. The Board consists of an employers' panel and an operatives' panel, the former comprising six representatives nominated by the Federation of Civil Engineering Contractors and the latter comprising representatives of the Transport and General Workers' Union, the National Union of General and Municipal Workers, the National Union of Enginemen, Firemen, Mechanics and Electrical Workers together with three representatives of craftsmen, one of whom is representative of woodworkers and one of bricklayers.

Direct labour

17. The negotiation arrangements described above are for the industry generally. Substantial numbers of building and civil engineering workers are, however, employed directly by local authorities and other public bodies, and by private industrial firms. In respect of these workers separate negotiation arrangements may apply, the most important being the Joint Negotiating Committees for Local Authorities Services (Building and Civil Engineering), of which there are separate Committees for England and Wales and for Scotland; and the Whitley Council arrangements for the National Health Service, which operate on a Great Britain basis.

Liaison Within the Industry

Building

18. On the building side, the most important channels of liaison are the Joint Standing Committee of Architects, Quantity Surveyors and Building Contractors in Scotland; and, in England and Wales, the National Joint Consultative Committee of Architects, Quantity Surveyors and Builders. Membership of the Scottish body comprises representatives of the Royal Incorporation of Architects in Scotland, the Royal Institution of Chartered Surveyors (Scottish Branch) and the Scottish National Building Trades' Federation (Employers)—including other trade associations nominated by the Federation. At the invitation of the Committee a representative of the Association of Consulting Engineers attends its meetings. Membership of the National Joint Consultative Committee is made up of representatives of the Royal Institute of British Architects, the Royal Institution of Chartered Surveyors, and the National Federation of Building Trades Employers. The role of these two bodies might be described broadly as to act as the consultative and advisory bodies in respect of matters affecting the building industry in which the constituent bodies are mutually interested. The Scottish Joint Standing Committee has, however, a specific remit to authorise the introduction of new Modes of Measurement and the revision of existing Modes. For reference, the objects of these two bodies are set out in full in Appendix 5.

19. The Joint Standing Committee and the National Joint Consultative Committee are entirely separate bodies and there is no formal machinery for liaison between the two.

20. There is also in Scotland the Scottish Building Contracts Advisory Board, which was set up in 1956 with the following terms of reference:

"(*a*) To provide an authoritative body in Scotland to which reference may be made for guidance in the interpretation of the Regulations and General Conditions of Contract for Building Works in Scotland dated 1st September, 1954, and any subsequent amendments;

(*b*) To provide a medium whereby questions arising from the operation of the said Regulations and General Conditions of Contract may be considered and appropriate action taken with a view to achieving an equitable balance between the interested parties."

21. The constituent bodies represented on the Scottish Building Contracts Advisory Board are the Royal Incorporation of Architects in Scotland and the Scottish National Building Trades' Federation (Employers), each with four representatives, and there are in addition two representatives of the Royal Institution of Chartered Surveyors.

Civil engineering

22. There is no body in the civil engineering side of the industry equivalent to the Joint Standing Committee and the National Joint Consultative Committee referred to in paragraph 18. The reason for this presumably lies in the different structure of the civil engineering industry.

General Liaison

23. Liaison with the Government, at national level, is maintained by the National Consultative Council of the Building and Civil Engineering Industries, the Chairman of which is the Minister of Public Building and Works as the Minister responsible to Parliament for questions affecting the industry. The Council is representative of architects, surveyors, civil engineers, civil engineering contractors, building contractors (including the Scottish Federation), and building and civil engineering operatives. The Royal Incorporation of Architects in Scotland is not directly represented on the Council.

24. The Joint Advisory Panel for the Building and Civil Engineering Industries in Scotland acts to some extent as the Scottish counterpart of the National Consultative Council. Its membership comprises representatives of all sides of the industry and of Government departments.

APPENDIX 5

Constitution of Joint Standing Committee and of National Joint Consultative Committee

A. **Joint Standing Committee of Architects, Surveyors and Building Contractors in Scotland**

The constitution of this body is:

(a) To provide a medium whereby questions affecting the building industry in Scotland, and in which the constituent bodies are mutually interested, may be discussed and any appropriate action taken.

(b) To provide a means of concerting action within the building industry in Scotland and in making representations to the Government, public or other bodies in Scotland.

(c) To authorise the introduction of new Modes of Measurement and the revision of existing Modes and to deal with any interpretation thereof.

B. **The National Joint Consultative Committee of Architects, Quantity Surveyors and Builders**

The constitution of this Committee is as follows:

To provide a medium whereby matters of national importance in which the constituent bodies are mutually interested may be discussed and any appropriate action taken; provided that no action shall be taken by the Committee which would encroach upon the legitimate sphere of any constituent body, upon the functions of any other joint or tripartite body established between them; or upon the normal liaison activities established between the three constituent bodies.

APPENDIX 6

Building Industry

Negotiation on Wages and Conditions

Trade (1)	*National* (2)	*Scotland* (3)	*England and Wales* (4)
General	—	Scottish National Joint Council for the Building Industry (S.N.J.C.)	National Joint Council for the Building Industry (N.J.C.)
Painting	—	Scottish Painting Council	Covered by N.J.C.
Glazing	—	Direct negotiation between employers' and operatives' Associations	National Joint Industrial Council for the Glazing Trade, but wages and conditions dealt with by N.J.C.
Plumbing	—	Direct negotiation between employers' and operatives' Associations (except for plumbers employed by building firms which are members of the Scottish National Building Trades' Federation (Employers)	N.J.C.
Heating and ventilating	Direct negotiation between employers' and operatives' on a national basis	As in Column (2)	As in Column (2)
Electrical	—	Direct negotiation between employers' Association and the Electrical Trades Union	National Joint Industrial Council for the Electrical Contracting Industry
Plastering	—	Scottish National Joint Committee for the Plastering Trade, but wages and conditions dealt with by the S.N.J.C.	N.J.C.
Felt roofing	National Joint Council for the Felt Roofing Contracting Industry	As in Column (2)	As in Column (2)
Terrazzo-mosaic	—	Direct negotiation between employers' and operatives' Associations	National Joint Council for the Terrazzo-Mosaic Industry
Mastic asphalt	National Joint Council for the Mastic Asphalt Industry	As in Column (2)	As in Column (2)
Demolition	Demolition Industry Wages Board—follows N.J.C. and S.N.J.C. except for procedure on disputes	As in Column (2)	As in Column (2)
Precast concrete	—	Scottish National Joint Council for the Scottish Precast Concrete Industry	National Joint Industrial Council for the Cast Stone and Cast Concrete Products Industry

APPENDIX 7

Conditions of Contract

Comparison of R.I.B.A. Form of Contract and Scottish General Conditions of Contract

Withdrawal of tender

1. A tender by a contractor in England is an offer only, which he can withdraw at any time before its acceptance unless made for a consideration. The Scottish General Conditions of Contract lay down a period (the "tender period") during which the contractor's tender can be accepted by the client and the contractor can be held bound by his tender and cannot withdraw it during that period.

Treatment of errors

2. Under the R.I.B.A. Form of Contract, no adjustment of the contract sum is allowed and any error—of arithmetic in the computation of the contract sum, in the rates entered in the bill, or otherwise—is deemed to have been accepted by the parties (unless the contractor withdraws his tender). Under the Scottish General Conditions of Contract any errors either of extension or summation (but not in rates) are rectified and the tender amount is the amount brought out by the schedule as so adjusted. (Attention is, however, drawn to recommendations in the Code of tendering procedure, referred to in Chapter 4, paragraph 75(*c*).)

Retention monies

3. (*a*) Under the R.I.B.A. Form of Contract the amount of retention is a matter for arrangement, but is not normally to exceed 10 per cent. of the value of the work done (including materials on the site), with an overall limit of retention of 5 per cent. of the contract sum. Under the Scottish General Conditions of Contract the retention is fixed at 10 per cent. of the value of the work done and 20 per cent. of the value of materials on the site, and the limit is left open for entry in the appropriate clause, with no indicated restriction such as the 5 per cent. mentioned in the R.I.B.A. Form of Contract. In practice, a limit to the amount of retention is seldom stated in a Scottish contract.

(*b*) Under the R.I.B.A. Form of Contract the contractor is usually paid half the retention money immediately on issue of the certificate of practical completion, and the other half six months later. The sum retained for six months amounts to 2½ per cent. of the contract sum where the limit of retention is set at the maximum of 5 per cent. referred to in (*a*). Under the Scottish General Conditions of Contract the whole retention money, usually 10 per cent., is withheld until three months after completion, when half is paid. The other half is usually only due for payment 12 months after completion. If no limit has been set to the total of the retention fund, as in (*a*), the sum retained for the period of 12 months amounts to 5 per cent. of the value of work done. When the standard local authority modification to the Scottish General Conditions of Contract is used, the arrangement is that the contractor is paid, three months after completion, the retention money less an amount not exceeding 5 per cent. of the total contract value, which is retainable until the end of the maintenance period, normally 12 months.

(*c*) Under the R.I.B.A. Form of Contract, the employer's interest in the retention money is fiduciary as trustees for the contractor and the contractor's beneficial interest in the retention money is subject only to the right of the employer to have recourse to it for payment of any amount he is entitled under the contract to deduct from any sum due or to become due to the contractor. Under the Scottish General Conditions of Contract, provision is made for the retention money, on application by the contractor, being deposited in a bank in the joint names of the employer and the contractor. The retention money so deposited, with interest thereon, is held in trust for the employer as security for the due completion of the work. This provision, which is seldom used, is not included in the standard local authority form of conditions of contract.

Measurement of variations

4. Under the R.I.B.A. Form of Contract, effect is to be given to "the measurement and valuation of variations" in interim certificates for payments, which implies that the measurement and valuation are to be done before or immediately after variations are executed. The Scottish General Conditions of Contract are not so specific and the variations are not usually valued accurately until the agreement of the final report.

Reduction of work

5. Under the R.I.B.A. Form of Contract, if omissions substantially vary the conditions under which the remaining work is done, provision is made for making a fair valuation in accordance with the changed circumstances. Under the Scottish General Conditions of Contract, where the work originally proposed is substantially reduced, compensation is to be paid to the contractor on a percentage basis.

Fluctuations

6. The R.I.B.A. Form of Contract contains a detailed clause governing the arrangements where the contract price is to fluctuate in accordance with movements of wages and prices of materials. This clause is optional in its application; no similar provision is included in the Scottish General Conditions of Contract and where a contract is on a fluctuating basis a supplementary clause has to be inserted.

Provisional and prime cost sums.

7. Under the R.I.B.A. Form of Contract, provisional sums and prime cost sums must be expended through the contractor. The contractor must be allowed 2½ per cent. discount for cash for work done by nominated sub-contractors and 5 per cent. discount for cash on articles supplied by nominated suppliers. Under the Scottish General Conditions of Contract, provisional sums for materials to be supplied or for works to be performed by specialists or for other works or fittings to the building are paid without deduction by the contractor to such person as the architect shall direct, and the contractor is reimbursed the amounts so paid with an addition at the same rate per cent. as he allowed in his schedule. For prime cost sums for goods to be obtained and fixed by the contractor, the sums given in the schedule imply the net cost prices to the contractor, after deduction of all discounts except for discount for cash, to which the contractor is entitled up to a limit of 5 per cent. Provisional sums or prime cost sums may be expended by the architect or employer direct, but in that case the contractor is entitled to receive the same allowance as if the transaction has been carried out through him.

Payments to sub-contractors

8. Under the R.I.B.A. Form of Contract the client may in certain circumstances make payments direct to a nominated sub-contractor, in default of payment to him by the principal contractor. In the Scottish General Conditions of Contract provision is made for withholding further payments to the principal contractor until he satisfies the architect that due payments have been made to the sub-contractor; this applies whether the sub-contractor is nominated or merely approved.

Conditions of contract for sub-contracting

9. Where prime cost sums are involved the R.I.B.A. Form of Contract sets out provisions applicable to sub-contractors nominated to supply and fix materials or goods or to execute works, and also provisions applicable to nominated suppliers. The contract between the contractor and the nominated sub-contractor must (save where the architect and the contractor otherwise agree) include the specified conditions, and the sub-contractor must indemnify the contractor against the same liabilities in respect of the sub-contract work as those for which the contractor is liable to indemnify the employer under the contract. Under the Scottish General Conditions of Contract, where prime cost items or provisional sums are involved, the person employed can decline to be bound by those conditions and in that event the contractor must intimate this to the employer before completing the arrangements. Where such person is not bound by the conditions, the contractor is not responsible for the obligations imposed under the maintenance period clause. Under the Scottish General Conditions of Contract, however, there is a general provision on sub-contracting which provides that the contractor shall take a sub-contractor as "bound in the whole obligations and others contained in these General Conditions of Contract".

Completion

10. Under the R.I.B.A. Form of Contract there is provision for the maintenance period to start on what is described as "practical completion" of the works, as certified by the architect. In Scotland, the reference is to "completion" and it is for the contractor to make intimation to the architect that he considers the work to be completed.

Security

11. The Scottish General Conditions of Contract contain a provision that when a contract has been entered into the contractor may be required by the employer to give security for the due performance of the contract, or the balance thereof; and the employer may be required by the contractor to give security for the payment of monies to become due under the contract. There is no similar provision in the R.I.B.A. Form of Contract, save as regards retention monies.

Injury to persons

12. The Scottish General Conditions of Contract make the contractor responsible for all claims arising out of accidents to the contractor's workmen or to third parties, and require him to insure against such risk. In the R.I.B.A. Form of Contract, the contractor's liability is specifically made exclusive of injury arising from the act or neglect of the employer or of any person for whom the employer is responsible.

Extension of contract

13. The R.I.B.A. Form of Contract sets out a comprehensive list of circumstances which might cause delay in the completion of the contract, through no fault of the contractor, and requires the architect where such circumstances apply to make a fair and reasonable extension of the contract period. No similar comprehensive list is included in the Scottish General Conditions of Contract, but clause 11 refers to lockouts, strikes, exceptionally inclement weather, or circumstances outwith the control or responsibility of the contractor, and requires the allowance of such additional time as may be considered by the architect or the arbiter to be fair and reasonable.

Determination of contract

14. The R.I.B.A. Form of Contract makes wider and more detailed provisions for determination of the contract than do the Scottish General Conditions of Contract.

Architect's instructions

15. Under the Scottish General Conditions of Contract the contractor is bound, in carrying out the work, to observe "such directions as may from time to time be given by the architect". In the R.I.B.A. Form of Contract, the contractor is bound to comply with the architect's instructions only "in regard to any matter in respect of which the architect is expressly empowered by the conditions to issue instructions".

Confirmation of architect's instructions

16. Under the Scottish General Conditions of Contract no alteration or addition to, or deviation or omission from, the work can be made without the sanction of the employer or the architect, as given by written order and variations "so sanctioned" are not held to invalidate the contract. The R.I.B.A. Form of Contract also requires instructions to be in writing, but it is explicitly provided that the architect may confirm any instruction in writing at any time before the issue of the final certificate, when the instruction is deemed to have taken effect at the date on which it was issued.

Dismissal

17. The R.I.B.A. Form of Contract authorises the architect to require, reasonably, the dismissal from the work of any person employed thereon. The Scottish General Conditions of Contract contain no such specific provision, but the architect has wide powers to issue instructions, which could possibly be held to include an instruction to dismiss.

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